**Chemical Change**

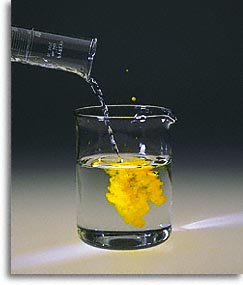
*Write on SEPARATE piece of paper*

Are the following examples of physical or chemical changes? Explain your choices.

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1. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

**Types of Reactions I**

*Write on SEPARATE piece of paper*

1. Fill in the blanks in the table. If the ‘Type of Reaction’ is given, create an example to fit the description.

|  |  |
| --- | --- |
| **Reaction** | **Type of Reaction** |
| 1. S + O2 🡪 SO2 |  |
| 1. SO3 + H2O🡪 H2SO4 |  |
| 1. FeBr3 🡪 Fe3+ + Br |  |
|  | Decomposition |
|  | Combustion |

1. Answer the question to the scenario below.

You and your friends go camping and decide to light a fire to roast some marshmallows. You find as much dry wood as possible, make a big pile, and start the fire. At the end of the night, all of the logs turned into ash and soot, and the pile of logs that used to be there is now gone.

How is this possible? Doesn’t this disobey the Law of Conservation of Mass? Explain.



**Types of Reactions II**

*Write on SEPARATE piece of paper*

Identify the type of reaction and balance the equations:

1. Cu+ AgNO3 🡪 Ag + Cu(NO)3
2. MgCl2 + Ca(OH)2 🡪 Mg(OH)2 + CaCl2
3. HNO3 + KOH 🡪 KNO3 + H2O

Predict the products of the following reactions and balance the equations:

1. Zn + CuCl2 🡪
2. NaOH + HCl 🡪

**Activity Series**

*Write on SEPARATE piece of paper*

Will the following reactions take place? If so, write the products and balance the chemical equations.

1. Zn + Mg(NO3)2 🡪
2. Al + Fe2O3 🡪

Based on the following electronegativities, arrange the following elements from MOST reactive to LEAST reactive:

METALS

1. Mg: 1.2 Pb: 1.8 K: 0.8 Na: 0.9 Ag: 1.9 Ba: 0.9

NON-METALS

1. Br: 2.8 Cl: 3.0 F: 4.0 I: 2.5

**Reaction Mechanisms**

*Write on SEPARATE piece of paper*

Compare and contrast the mechanisms for chemical change using the Venn diagram below. The ‘similarities’ between the two types go in the space where the two circles intersect.

Kinetic Molecular Theory Collision-Reaction Theory